transmitter power output and an omnidirectional antenna with a 13 dB gain would yield a signal with that faded S/N ratio 15 miles away.

With the passage of time, it has become evident that the resulting rules, codified in Section 21.902(d), are inherently flawed. As WCAI has demonstrated, they are based on technology that is now obsolete -- as a result of dramatic improvements in reception equipment technology, the benchmark faded S/N ratio is now available well beyond 15 miles for even a station operating at 10 watts. And, since the Commission in Gen. Docket No. 90-54 increased the maximum transmitter output power at which stations can readily operate,[40] most wireless cable systems are being designed to operate with a transmitter output power in excess of the 10 watt level that was standard when the current 15-mile PSA was formulated. Thus, an adequate signal is being provided by wireless cable operators to subscribers located well beyond the current PSA boundaries.[41] As a result, the many stations that transmit a quality signal farther than the "typical" station are denied protection of service to subscribers.

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[40] *See Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, 5 FCC Rcd 6410, 6418-19 (1990), on recon.* 6 FCC Rcd 6764 (1991)[hereinafter cited as "*Gen. Docket No. 90-54 R&O*"].

[41] Indeed, no station could ever possibly meet precisely the parameters utilized since the Commission made no allowance at all for the inevitable line and connector losses between the output of the transmitter and the input of the transmission antenna. Thus, while the Commission assumes that stations operating at 10 watts transmitter output power ("TPO") and a 13 dB gain antenna would transmit with an EIRP of 23 dBW, most stations utilizing that equipment actually transmit with an EIRP of 19-21 dBW as a result of the unavoidable line and connector losses.

WCAI has proposed in its pending Petition for Partial Reconsideration in General Docket No. 90-54 an approach that more closely tailors the PSA boundary to the service capabilities of each station, without introducing undue complexity. WCAI's proposal was made after the Commission rejected an earlier proposal to establish the PSA boundary based on a signal strength contour. In rejecting WCAI's proposal, the Commission reasoned that:

> We are not persuaded that it is advantageous for MDS to abandon the certainty of a uniform, specified geographic area as the protected service area and substitute a determination based on a signal strength contour. Substantial staff resources would be needed to be devoted to making the individual determination for each MDS station's protected service area, which includes weighing specific technical characteristics and environmental factors. . . . A calculation of signal strength contours would create difficulties both for the industry and the Commission, with resulting delays in delivering service to the public.[42/]

Simply stated, WCAI proposes that the PSA boundary for each station that transmits omnidirectionally be set at a fixed mileage (subject to the particular radio horizon of the station), with the length of the radius dependent upon the EIRP at which the station radiates. For those stations transmitting non-omnidirectionally, WCAI would set the boundary along each radial depending upon the EIRP transmitted along that radial. The specific radius for

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[42/] *Gen. Docket No. 90-54 R&O,* 5 FCC Rcd at 6419-20.

each level of EIRP is set forth in the following table, which WCAI proposed be incorporated into Section 21.902:

EIRP Along Radial (dBW)	Distance to Boundary (Miles from Station)		EIRP Along Radial (dBW)	Distance to Boundary (Miles from Station)
0	7.2		20	18.0
1	7.5		21	19.0
2	7.9		22	20.0
3	8.3		23	21.0
4	8.7		24	22.0
5	9.1		25	23.0
6	9.5		26	24.0
7	10.0		27	25.0
8	10.5		28	26.0
9	11.0		28	27.0
10	11.5		30	28.5
11	12.0		31	29.5
12	12.5		32	31.0
13	13.0		33	32.5
14	13.5		34	34.0
15	14.5		35	35.5
16	15.0		36	37.5
17	15.5		37	39.5
18	16.5		38	41.5
19	17.0		39	44.0

These specific radii were derived in the same fashion that the Commission first derived the 15-mile PSA boundary in the *Notice of Inquiry and Proposed Rulemaking* in General Docket No. 80-113 -- WCAI calculated the distance at which a station transmitting at the given EIRP would yield the benchmark faded S/N ratio, but assumed the use of today's superior reception technology.

In its Petition for Partial Reconsideration, WCAI provided the Commission with an extensive discussion of the public interest benefits to be derived from adoption of its proposed

PSA definition. In the interest of brevity, WCAI will refrain from repeating that entire discussion here. However, the Commission should note several significant benefits that relate directly to the subject matter of this proceeding -- the expediting of wireless cable service to the public.

First, WCAI's proposed rules specifically tailor each station's PSA to the size of the area it can reliably serve. WCAI's proposal assures both (a) that no station has a PSA covering an adjacent community it cannot serve, and (b) that no community that can receive service from one operator loses that service because cochannel facilities are constructed too close by, causing mutually destructive interference. The Commission's PSA definition should follow the laws of physics, for the laws of physics will not change to accommodate the Commission's rules.

WCAI's goal is to assure that as many Americans as possible have access to wireless cable service as a competitive alternative to franchised cable. If each station is afforded a PSA equal in size to the area it can effectively serve, that goal can be achieved. The beauty of WCAI's proposed rules is that they create a direct nexus between a given station's ability to provide reliable service and that station's PSA.

WCAI hopes the Commission will be struck by the irony that WCAI's proposal was rejected at the very same meeting the Commission adopted its *Report and Order* in MM Docket No. 87-267 -- the AM radio improvement proceeding.[43/] Just as the Commission did

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[43/] *See Review of the Technical Assignment Criteria for the AM Broadcast Service*, 6 FCC Rcd 6273 (1991).

great harm to AM licensees by attempting to cram more stations into the band than the laws of physics allow, the Commission is threatening wireless cable because of a misguided belief that more, closely-spaced MDS stations necessarily results in better service. In so doing, the Commission has made a serious error that will jeopardize the viability of wireless cable across the country unless reversed. The Commission should learn from the mistakes that have so badly crippled the AM service. Adopting the rule revisions proposed by WCAI will spare the wireless cable industry that future.

Second, enlarging the PSA so that it adequately protects a wireless cable system's subscribers will frustrate those inclined to file strike applications. Obviously, if the PSA provides adequate protection, it will be impossible for a greenmailer to propose a closely-spaced station that, while meeting the FCC's interference protection benchmarks, could cause actual electrical interference at subscribers' residences. The net result of frustrating greenmail applications will be to reduce the number of MDS applications, thus freeing staff resources to process *bona fide* MDS applications more rapidly.

Third, WCAI's approach will simplify MDS application processing. The EIRP at which each station transmits along a given azimuth is easily determined from the application for that station, and, once determined, the table proposed by WCAI identifies precisely the PSA boundary. In particular, WCAI's proposal will greatly simplify the process of determining the PSA for stations utilizing non-omnidirectional transmission antennas. Under the formula set out currently in Section 21.902(d)(2) of the Rules, it is extremely difficult to calculate with precision the PSAs for stations that do not transmit with the same EIRP in

every direction. Reasonable engineers have frequently disagreed over the determination of PSA boundaries for non-omnidirectional systems, resulting in unnecessary disputes. WCAI's approach, however, specifies a precise radius for each azimuth based on the EIRP level along that azimuth. Since it is not difficult to calculate the EIRP of a non-omnidirectional antenna along any given azimuth, the task of calculating the PSA for stations that transmit with non-omnidirectional antennas will be greatly simplified under WCAI's proposal.

The Commission should also note that WCAI has proposed clear, concise policies to address the transition to new PSA rules.[44/] Specifically, WCAI has proposed that in order to simplify the transition and avoid the need for amendments to existing applications filed in reliance on the current rules, the Commission should only require that applications for new stations or major modifications filed after the effective date of the new rules comply with the new PSA rules. Thus, while all stations will enjoy the benefit of a new PSA definition with respect to applications submitted after the effective date of new rules, no applicant under the current rules will be disadvantaged. For example, if Applicant A has on file on the effective date of the new rules a proposal that causes no interference to Station B under the existing rules, but would interfere with the PSA afforded Station B under WCAI's proposal, Applicant A's application should still be grantable. However, if Applicant C files after the new rules become applicable, it should have to protect the new PSAs for Applicant A and Station B.

Finally, in recognition of the fact that many of the MDS licensees that will be grandfathered under new PSA rules in the future will need to amend their applications or

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[44/] *See* WCAI Petition for Reconsideration, at 5 n. 10.

modify their licenses, WCAI has suggested that the Commission provide that where a station must accept harmful interference from another station because of PSA grandfathering, in any subsequent analysis of the potential for interference from the interfering station to the interfered-with station submitted with an amendment to the application for the interfering station or with an application for a modification of the license for the interfering station, the PSA for the interfered-with station shall be reduced in size by eliminating any area(s) in which interference from the most recently authorized design of the interfering station is predicted. This revision is consistent not only with the Commission's previous commitment to permit interference-reducing reconfigurations,[45/] but also with the Commission's approach to an analogous problem when it first established a PSA for single channel MDS stations.[46/]

In short, adoption of WCAI's proposed revisions to the Commission's PSA definition will significantly benefit the Commission, the legitimate wireless cable operator and the public.

III. ELIGIBILITY TO PARTICIPATE IN THE FIRST WINDOW SHOULD BE RESTRICTED TO WIRELESS CABLE OPERATORS ACCUMULATING THE CRITICAL MASS OF CHANNELS NECESSARY TO OFFER A VIABLE SERVICE.

In the *NPRM*, the Commission has solicited comment on three alternative mechanisms for governing the filing of MDS applications in the future, the so-called "MSA/RSA/ADI Approach," the "E, F and H Identified Sites Approach" and the "National Filing Window Proposal." As an option to the latter alternative, the Commission has proposed to limit

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[45/] *See Gen. Docket No. 90-54 R&O,* 5 FCC Rcd at 6412-13.

[46/] *See 80-113 FR&O,* 98 F.C.C.2d at 111.

eligibility to participate in the first filing window to those controlling some critical mass of channels in the market.[47/] WCAI urges the Commission in the strongest possible terms to limit eligibility to participate in the initial round to those filing to serve a critical mass of channels in the market, regardless of which of the three alternatives is adopted to govern subsequent filing opportunities.

As noted above, the goal of this proceeding should not be merely to lift the freeze, it should be to get wireless cable systems on the air as quickly as possible. Limiting the first round of applications to those best positioned to get systems in operation rapidly will achieve that goal. The Commission has already acknowledged "that wireless cable operators endeavoring to compete with wired cable systems, whose number of channels often exceeds 50, must have access to as many of the available 32 or 33 ITFS and MMDS channels as possible in a given market."[48/] Permitting applications for new MDS stations from those entities that lack access to the critical mass of channels necessary to compete with franchised cable will do little to advance the goals of this proceeding. In contrast, limiting eligibility to participate in the first round of applications after the freeze is lifted to those who can achieve the critical mass of channels necessary to succeed is the best way of assuring rapid service to the public. When the Commission last explored lifting the MDS filing freeze, every party

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[47/] *See NPRM*, at ¶ 14. Since the Commission has acknowledged that it possesses the legal authority to limit eligibility in this manner, WCAI will refrain from addressing that issue further at this juncture.

[48/] *Amendment of Part 74 of the Commission's Rules With Regard to the Instructional Television Fixed Service*, 9 FCC Rcd 3360, 3364 (1994).

addressing this issue supported in some fashion the establishment of a priority period during which only the wireless cable operator in a given market would be entitled to apply for unlicensed spectrum in that market.[49/]

As a practical matter, WCAI believes that a wireless cable system must have access to a minimum of twenty channels to succeed in all but rural areas, where twelve channel systems appear to be viable. Therefore, the Commission should initially limit eligibility to applicants proposing to locate new MDS stations in an MSA or within fifteen miles of the boundary of a MSA[50/] that demonstrate that the number of channels being applied for, coupled with the number of channels that applicant already has under its programming control at the proposed station site, equals at least twenty. Applicants proposing to locate new MDS stations more than fifteen miles beyond the boundary of the nearest MSA should be required to demonstrate that the number of channels being applied for, coupled with the number of channels that applicant already has under its programming control at the proposed station site,

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[49/]*See* Comments of WCAI, at 16-17 (filed Aug. 30, 1993); Comments of WJB-TV Limited Partnership (filed Aug. 30, 1993); Comments of the Coalition of Wireless Cable Operators, at 5-9 (filed Aug. 30, 1993); Comments of the Wireless Cable Coalition, at 2-3 (filed Aug. 30, 1993); Comments of Lawrence Behr Associates, Inc., at 2-3 (filed Aug. 30, 1993); Comments of Sioux Valley Rural Television, Inc. (filed Aug. 23, 1993).

[50/]WCAI's proposal to group those applications proposing to install transmitters within an MSA with those proposing to install transmitters within fifteen miles of an MSA boundary is based on Section 21.901(d)(5) of the Rules. It reflects the fact that any system within fifteen miles of an MSA boundary is likely to be facing cable competition and will therefore need access to at least twenty channels to be viable.

equals at least twelve. In each case, the applicant should be required to demonstrate that it currently has at least four channels under license or lease at the proposed site.[51/]

For purposes of this proposal, only channels for which a license or conditional license is valid and in full force and effect on the day of filing, or for which an application has been filed that has been cut-off and is not subject to a competing application, should be counted. If a petition to deny is pending against an application for channels being applied toward the minimums, an application for new MDS channels that otherwise meets the criteria should be accepted, subject to resolution of the petition in favor of the applicant. Otherwise, the Commission will create a perverse incentive to file frivolous petitions to deny in order to deprive operators access to the initial filing window.

Moreover, only channels over which the applicant retains the right to provide video programming to subscribers should be counted towards the minimums. If a licensee has leased channels to a wireless cable operator, the licensee should not be permitted to count those channels, but the operator should. Similarly, if channels leased by a channel aggregator have been subleased to a third party, the channel aggregator should not be permitted to count the channels, but the operator should. In this way, the prospects for getting available MDS channels into the hands of the party most likely to utilize them in providing service to the public will be maximized.

[51/]A similar requirement is imposed on applicants for commercial use of ITFS channels under Section 74.990(c) of the Commission's Rules.

Admittedly, adoption of WCAI's proposal will limit the revenue realized by the federal government as a result of the auctioning of MDS spectrum, for there will be few mutually-exclusive applications during the first window, and fewer filing opportunities in subsequent windows.[52/] That fact, however, should have no bearing on this proceeding. As the House Committee on Energy and Commerce stated with crystalline clarity in H.R. 103-111:

> The Committee intends for the FCC to make its decisions based on sound communications policy pursuant to the Communications Act. The Commission is not a collection agency of the U.S. Government, and should not be influenced by budgetary considerations. [Section 309(j)(7)] is designed to insulate the FCC's communications policy decisions from budgetary pressures, and clarifies that important communications policy objectives should not be sacrificed in the interest of maximizing revenues from auctions.
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> In connection with application and licensing proceedings, the Commission should, in the public interest, continue to use engineering solutions, negotiation, threshold qualifications, service rules, and other means in order to avoid mutual exclusivity. The licensing process, like the allocation process, should not be influenced by the expectation of federal revenues and the Committee encourages the Commission to avoid mutually exclusive situations, as it is in the public interest to do so.[53/]

It has been suggested that limiting first window eligibility as proposed in the *NPRM* would be unnecessary, since the entity that has already accumulated other MDS and ITFS

[52/]As is, there are relatively few significant markets where there are no MDS facilities licensed; WCAI understands from the Commission's staff that there is one MDS channel licensed in every MSA, and multiple channels licensed in most MSAs. Thus, auctioning of MDS spectrum will likely not generate significant revenues, for the winning bidder will still have to acquire access to the critical mass of channels necessary to develop a system.

[53/]H.R. Rep. No. 103-111, 103rd Cong., 2d Sess. 258, *reprinted in* 1993 U.S. Code Cong. & Admin. News 580, 585.

channels in the market is likely to be the high bidder at an auction for additional MDS channels.[54/] That, however, is not necessarily the case. The House Committee on Energy and Commerce recognized that "there is a potential for applicants to acquire licensees pursuant to a competitive bidding process for a purpose other than delivering a service to the public."[55/] It was concerned, for example, that "an incumbent service provider could submit a bid for a license in a service that would compete with an existing business and engage in behavior that would prevent competition from occurring."[56/] That is a real concern here, as entrenched franchised cable operators have a strong incentive to frustrate the development of competition in order to preserve the value of their existing businesses.[57/]

[54/]*See* Comments of Dalager Engineering Company, MM Docket No. 94-131, at 1-2 (filed Jan. 5, 1995); Comments of the Richard L. Vega Group, MM Docket No. 94-131, at 10 (filed Jan. 9, 1995). In its early-filed comments, The Richard L. Vega Group ("Vega") opposed limiting eligibility to apply during the first window to those acquiring a critical mass of channels on the grounds that potential applicants for MDS spectrum might not desire to use that spectrum in connection with a wireless cable service. *See* Comments of The Richard L. Vega Group, at 9-10 (filed Jan. 9, 1995). What Vega ignores, however, is that the Commission's stated goal in this proceeding is to "allow [wireless cable] operators to enhance their service more rapidly, providing more competition to wired cable." *NPRM*, at ¶ 1. While WCAI does not suggest that the Commission require that all MDS facilities be employed for wireless cable, it is certainly appropriate for the Commission to give those proposing to compete against the entrenched franchised cable monopoly "first dibs" on available MDS channels.

[55/]H.R. Rep. No. 103-111, 103rd Cong., 2d Sess. 256, *reprinted in* 1993 U.S. Code Cong. of Admin. News 500, 583.

[56/]*Id.*

[57/]Assume that a prospective wireless cable system operator has leased nineteen channels in a market, that twenty channels are a prerequisite to viability, and that there is such extensive ITFS usage that just twenty MDS and ITFS channels are available in the market. In an (continued...)

Of even greater concern to WCAI is that scam artists will leap on the auction bandwagon to once again fleece naive investors. The Commission knows full well that consumers across America have been victimized by fraud involving wireless cable investments. First, it was the application mills that charged several thousand dollars for MDS applications that proved to be unacceptable for filing.[58/] Then, it was fraudulent partnership offerings that led consumers to invest hundreds of millions of dollars in wireless cable partnership offerings, only to find that the promoters skimmed the bulk of the money, that there was insufficient money left to develop the service, and that the offering's financial projections were wildly optimistic.[59/] Now, WCAI fears, these same promoters are going to raise pools of money from individuals to participate in the auction, again skim off outlandish

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[57/](...continued)
auction for the remaining MDS channel, the local cable operator may well value that channel more highly than the potential wireless cable operator. The cable operator's business is valued at $1,500-$2,000 per subscriber. Even if the competing wireless cable system only convinces a modest 10,000 subscribers to switch from cable service, the value of the cable system is reduced by $15 million to $20 million. Although to WCAI's knowledge no wireless cable channel has ever been sold for more than $1 million, this cable operator has a strong incentive to bid much higher.

[58/]*See 4330 Applications for Authority to Construct and Operate Multipoint Distribution Service Stations at 62 Transmitter Sites,* FCC 94-290 (rel. Dec. 8, 1994), *and 101 Applications to Construct and Operate Multipoint Distribution Service Stations,* FCC 94-29 (rel. Dec.. 8, 1994), *appeal filed* A/B Financial, Inc. et al. v. Federal Communications Commission, No. 95-1027 (D.C. Cir filed Jan. 9. 1995).

[59/]*See, e.g.* Emshwiller, "A Few Suspects Crop Up Often In Tech Frauds," *Wall St. J.*, at B1 (Jan. 13, 1995); Michaud, "Analysts Say Wireless Cable Has Become Ripe for Fraud," *L.A. Times* (April 13, 1994); Campbell, "The Wireless TV Game: Hot Technology, Overheated Promotions," *Orange County Register*, (May 29, 1994); Kreig, "SEC Attacks Boiler Room Schemes As 'Securities' Frauds," *Spectrum*, at 6 (May 1994).

fees, and then bid excessive amounts in order to secure licenses, even if the auction payments are so high and the number of channels acquired are so low as to doom the system to failure. This sort of behavior may be "irrational" to an economist, but it is a real possibility. The promoter has no concern about the future of the channels or whether service is ever provided to the public; his or her only objective is to secure a license and earn a fee.[60/]

Obviously, if the Commission requires new MDS licensees to construct their facilities without undue delay -- WCAI recommends retention of the current 12 month construction period[61/] -- and recaptures the authorizations of those that do not construct in timely fashion, it will somewhat reduce the harm caused by this sort of behavior. However, it will presumably take months, if not years, before the Commission can re-auction MDS channels

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[60/]WCAI is hardly alone in its concern that MDS auctions could lead to rampant speculation and abuse. The National Association of Securities Administrators has already warned that:

> Much of the current debate about selling off a major section of the radio spectrum has focused on the issue of how the federal government might best wring every possible dollar of revenue from the process. However, the outcome may end up having enormous (even if entirely unintended) consequences for consumers; **this new federal licensing process could serve as the biggest bonanza to date for con artists and other sharp operators** who will waste no time in gearing up a new and even bigger generation of application mills. It is difficult to imagine that the same individuals who have seized upon far more modest opportunities for illicit profit in the cellular telephone and wireless cable lotteries would pass up the enormous -- though no less fraudulent and abusive -- potential that privatizing the radio spectrum will hold for them.

"'Wireless Cable' TV Lottery Application Mills," CCH NASAA Reports, ¶ 8225 (April 1992).

[61/]47 C.F.R. § 21.43(a)(2).

recaptured from auction winners that fail to construct. During the interim, the public will be denied access to wireless cable. By providing those with the ability to access a critical mass of channels the first opportunity to secure vacant channels, the Commission can avoid any delay in bringing service to the public.

Finally, because the eligibility rules WCAI suggests for the first window of applications are likely to minimize number of mutually-exclusive applications, applicants filing during this initial window should be required to file electronic long form applications, supplemented by a demonstration of eligibility. This will facilitate ready identification of the few mutually-exclusive situations that may exist, and permit prompt processing of singleton applications. In those few cases during the first window where mutually-exclusive applications are filed, the Commission should afford the parties thirty days after the release of a public notice announcing the mutual exclusivity to settle. WCAI suspects that in most cases, mutually-exclusive applications will involve system operators in adjacent markets that have already come to some mutual accommodation to accept interference, so settlement of mutually-exclusive applications filed during the first window should be the rule. In any mutually-exclusive situation arising during the first window that does not settle, an open outcry auction should be used to award a license.[62/]

IV. EVEN AFTER THE FIRST WINDOW, THE COMMISSION SHOULD EMPLOY THE CURRENT SITE-SPECIFIC SYSTEM FOR LICENSING MDS CHANNELS.

[62/]As demonstrated *infra* at Section IV.B, open outcry auctions are the best mechanism available to the Commission for awarding MDS licenses.

A. The "Preferred Approach" Of Grouping Applications By Geographic Market Is Inappropriate For MDS.

As noted above, it is WCAI's view that the Commission's "preferred approach" for grouping MDS applications for competitive bidding is inappropriate under the particular circumstances presented by MDS. Quite simply, while WCAI agrees with the *NPRM* that the goal of this proceeding should be "to encourage universal coverage and afford the greatest likelihood of rapidly promoting the development of MDS as a viable competitive service,"[63/] adoption of the Commission's "preferred approach" will not achieve that objective.

WCAI certainly does not deny that the easiest way for the Commission to group applications for purposes of competitive bidding is by geographic area. Yet, simply grouping MDS applications by geographic area without regard to actual electrical mutual exclusivity has already proven problematic. When the Commission reallocated the E and F Group channels from the ITFS to the MDS, it did just that -- all applications proposing a station within a Standard Metropolitan Statistical Area ("SMSA") or a Standard Consolidated Statistical Area ("SCSA") or within 15 miles of an SMSA or SCSA were grouped for lottery purposes.[64/] While that approach no doubt simplified the task of grouping applications for purposes of random selection, it ultimately has delayed the introduction of competitive wireless cable services in many markets.

[63/] *NPRM*, at ¶ 10.

[64/] *See* 47 C.F.R. §21.901(d)(5).

In retrospect, it is obvious that the Commission's approach was at once over-inclusive and under-inclusive. On one hand, the simplistic use of geographic areas to group applications resulted in the dismissal of numerous applications that could have been granted. The Los Angeles SCSA is a prime example. Because of the size of the Los Angeles SCSA, multiple co-channel MDS stations can operate in the region without causing harmful electrical interference one to the other. Yet, the Commission grouped all of the applications filed in 1983 proposing new stations in the Los Angeles SCSA and awarded just one E Group and one F Group conditional license. As a result of this over-inclusive approach to grouping MDS applications for selection, the Commission prevented the granting of 1983 applications that could have co-existed with the lottery winners. The result is that there are areas of the Los Angeles SCSA that could have been receiving wireless cable service for years, but today still lack any service at all.

On the other hand, the Commission's approach to grouping applications has also proven under-inclusive, for it failed to treat as mutually exclusive applications proposing stations that cause actual harmful electrical interference to each other. In markets where SMSAs abut each other, such as Washington, DC/Baltimore, MD, Sarasota/Bradenton, FL, Odessa/Midland, TX, Stockton/Modesto, CA and others, service to the public has been delayed because the Commission awarded licenses for stations that cannot operate without causing destructive harmful interference to each other. While wireless cable is finally slowly developing in each of these markets, the processing is taking far longer than it would have under a scheme that grouped all applications that were mutually exclusive.

If the Commission insists upon grouping applications for new MDS station by geographic area in the post-freeze era, it must develop rules that will avoid both over-inclusion and under-inclusion.

A repeat of the over-inclusion problem would be almost inevitable were the Commission to utilize large geographic areas, such as Areas of Dominant Influence ("ADIs"), for purposes of grouping MDS applications. Many ADIs are huge, capable of supporting many wireless cable systems. If the Commission chooses to group applications by ADI or other large geographic area, it must afford an opportunity for entities to enter into bidding consortia and, should they prevail, partition the ADI between them.

Under-inclusion is likely to be a problem under the Commission's preferred approach, whether large ADIs or smaller MSAs and Rural Service Areas ("RSAs") are employed. Under the current regulatory system in which transmitter locations are not artificially restricted by considerations of geographic boundaries, wireless cable systems are designed to maximize the number of homes that can be economically served.[65/] While universal geographic coverage is not possible given existing technology, the current system has maximized the number of homes capable of receiving wireless cable service. Under this approach to locating wireless cable systems, it is not uncommon for a given system to serve subscribers located

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[65/]While wireless cable operators have a strong incentive to maximize the number of homes that can be served, they must carefully weigh the cost of facility upgrades that would only add a relatively few additional subscribers against the potential increased revenue. For example, an operator is not likely to construct a new, taller transmission tower when the increase in the radio horizon will only yield a few hundred subscribers.

beyond the MSA or ADI in which the transmission facilities are located.[66/] If operators are to retain the flexibility to construct facilities that maximize population coverage, they must be able to secure the ability to serve subscribers in adjacent geographic areas. To avoid the problems associated with under-inclusion, WCAI believes the only alternative available to the Commission is to permit simultaneous multi-round bidding or some other approach that permits an applicant to bid for licenses for adjacent geographic markets that may be interdependent.[67/] That, however, is a rather complicated, costly solution to a problem that can be avoided by retaining the existing site-specific licensing system.

Moreover, while perhaps the Commission can solve the problems experienced in the past with grouping MDS applications by geographic area, WCAI is troubled by the lack of specificity in the *NPRM* as to the rights that will be afforded auction winners under the Commission's preferred approach, and how the Commission intends to balance those rights with the vested interests of today's system operators -- the pioneers that have nurtured and developed the wireless cable industry.

[66/]Even though ADIs can be quite large, it is not uncommon for a wireless cable system to serve subscribers in multiple ADIs, for systems frequently locate near border areas. Take, for example, the situation in Ohio involving two wireless cable systems and three ADIs. The system located in Dayton, OH serves subscribers in the Cincinnati ADI, although Dayton is itself an ADI. The system in Lima, OH serves subscribers in the Dayton ADI, although Lima is itself an ADI.

[67/]As set forth *infra*, the only other approach to avoiding the under-inclusion problem would be to force operators in adjacent markets to design their systems so as to restrict emissions into each other's market -- an approach that disserves the public by reducing the number of homes that could receive wireless cable service.

WCAI's concern stems from the apparent inconsistency between Paragraphs 7 and 9 of the *NPRM*. Paragraph 7 suggests that the winning bidder "would be allowed to operate facilities on [the E, F and H] channels anywhere throughout the service area provided the specific engineering design of [its] wireless cable facility meets the Commission's interference protection standards to any previously proposed or authorized MDS facilities." Yet, in Paragraph 9 of the *NPRM*, the Commission specifically proposes that after an auction, the winner would be required by a specific date to file a long form application,[68/] presumably specifying the facilities that would be constructed. What is unclear is whether the Commission intends to afford the winning bidder for a geographic area residual rights to portions of the areas that it does not propose to serve in the post-auction long form application. If so, does the Commission contemplate that auction winners will be entitled to some sort of protection in areas that are not served by the facilities proposed in the post-auction long form application? These are critical questions, for the answers determine the degree to which the Commission's preferred approach poses a threat to the ability of existing wireless cable systems to continue interference-free service to existing subscribers and to introduce technological innovations like digital technology and interactive services.

From informal discussions with the Commission's staff, WCAI understands that the Commission's intent is to afford an auction winner residual rights within its geographic areas, including the right to be protected from any interference to unserved portions of its service area that might be caused by subsequent modifications to the facilities of incumbents. To do

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[68/] *See NPRM*, at ¶ 9.

so, the Commission will have to abandon the Section 21.902 current approach of affording interference protection based on D/U ratios measured at points within the PSA. This approach assumes that an applicant for a new or modified station knows the technical configuration of previously-proposed stations, for only with that information is it possible to calculate the D/U ratio at a given receive site. If the Commission intends to afford to auction winners protection of facilities that have yet to be designed, it will have to adopt some other form of interference protection, presumably one that in some manner restricts the signal strength one licensee can place into the service area of another licensee. Therein lie several problems.

In considering the proposals advanced in the *NPRM*, the Commission cannot forget that in those services where geographic licensing has proven effective (such as cellular telephones, PCS and IVDS), the technology has permitted licensees to tailor their service so they can provide universal service area to the geographic boundaries established by the Commission, without causing harmful electrical interference to neighboring systems. Those goals are generally accomplished through a cellularized network design -- a design that is unavailable to wireless cable operators.

Wireless cable operators, by contrast, must employ a single point-to-multipoint broadcast approach in order to secure a significant service area. Transmission antenna radiation patterns, however, do not correspond to geographic boundaries. As a result, it is impossible for the wireless cable operator to tailor its signal to provide universal coverage within a given geographic area and minimize signal leakage into neighboring areas. On one

hand, if a wireless cable system is designed to maximize coverage of a given geographic area, it will inevitably leak significant signal levels into a neighboring area. On the other hand, if a wireless cable system must reduce EIRP or tower height in order to reduce signal leakage into a neighboring area, it will inevitably be unable to serve parts of its own service area.

This reality fundamentally flaws the Commission's preferred approach. If an MDS licensee is restricted in the strength of the signal that it can transmit into a neighboring area, it will be unable to serve areas within its own geographic area. Thus, the stated goal of the preferred approach -- universal coverage -- cannot be achieved. To the contrary, by forcing systems to honor artificial geographic boundaries, the preferred approach eliminates the flexibility that licensees currently have to tailor their facilities to maximize population coverage.

The lack of specificity in the *NPRM* as to how the Commission would restrict incumbents in modifying facilities in the future were the preferred approach to be implemented is particularly troubling to WCAI. If incumbents that must modify facilities in the future in order to remain competitive are forced to meet new signal strength limitations at their PSA boundary, they will find themselves between the proverbial "rock and a hard place." Presumably, they would have to choose between remaining in their current configuration, or making modifications that reduce coverage in order to protect the residual rights of auction winners. The net loser would be the consumer, which would ultimately lose access to an effective competitor.

Finally, the Commission's suggestion that the PSA be defined as the boundaries of the geographic service area is flawed in that the MDS PSA would no longer be co-terminus with the ITFS PSA. The Commission has previously recognized the importance of providing wireless cable operators with the same PSA for all of their channels.[69/] Unless the Commission is prepared to provide an ITFS PSA based on geographic areas, no change should be made to the MDS PSA.

In short, the Commission's preferred approach is fraught with peril. Not only would adoption fail to accomplish the Commission's goal of enhancing wireless cable, it would undermine the growth of wireless cable services by unduly constricting the ability of today's wireless cable pioneers to modify their facilities in the future to accommodate an ever-changing marketplace.

B. The National Filing Window Approach Should Be Adopted Instead.

Given its druthers, and given the flaws in the Commission's preferred approach, WCAI urges the Commission to employ the national filing window approach described in Paragraph 12 of the *NPRM* for all windows following the first. Under such an approach, the Commission will continue to license facilities on a site-specific basis, providing applicants the flexibility they need to maximize population coverage.

[69/] *In the Matter of Amendment of the Commission's Rules Governing the Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational Fixed Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service*, 6 FCC Rce 6764, 6770 (1991).

In supporting this approach, WCAI believes that the *NPRM* is incorrect in suggesting that it "would likely result in a larger number of mutually exclusive applications."[70/] To the contrary, because this approach would not consider to be mutually exclusive applications that propose the same geographic area but are not electrically mutually exclusive, the use of a national filing window could actually reduce the number of mutually-exclusive applications filed. In any event, in WCAI's view, the number of applications that will be filed during the second and subsequent windows should not be substantial. As is, MDS authorizations have been issued for most channels in most markets. During the first window, wireless cable system operators will complete the channel accumulation process in many markets. By the time the second and subsequent windows are opened, the number of available authorizations will be somewhat limited.

Admittedly, it will be somewhat more difficult to determine which of those applications are mutually exclusive with which. However, by requiring the electronic filing of applications for new MDS stations, the Commission can expedite the entry of all essential data into its computer system, which then should be able to make determinations of mutual exclusivity.

In the *NPRM*, the Commission has sought comment on how it should resolve any "daisy-chains" that might arise under a national filing window approach.[71/] Because of the number of licenses that will be issued prior to the opening of a national filing window opened

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[70/] *NPRM*, at ¶ 13.

[71/] *See id.*

to all comers, the instances of daisy-chains should be limited. Since facilities that currently exist are proposed during the first window will be scattered across the map, breaks in what otherwise would become daisy-chains will inevitably occur.[72/] Where daisy-chains do occur, WCAI believes that they can be readily resolved at auction.

WCAI strongly supports the use of the oral outcry method for MDS auctions under the national filing window. Simultaneous, multi-round auctions will be unnecessary, since there will be little interdependence between different licenses. Moreover, use of simultaneous multi-round auctions is an extremely expensive approach to competitive bidding for both the Commission and applicants. As such, it would be inappropriate to use where the Commission is auctioning leftover MDS licenses that presumably have little value.[73/]

Single round sealed bid auctions, however, are equally inappropriate. As the Commission is well-aware, sealed bidding yields no information about license values until after the auction closes, when that information can be of no use to bidders. This tends to decrease bid levels and reduce the efficiency of the license assignment process.[74/] That could be particularly problematic here, since there has yet to develop in the wireless cable industry

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[72/]It should be noted that there have been rather few daisy-chain situations in the ITFS, where a system similar to a national filing window is in effect.

[73/]The Commission has recognized that simultaneous multiple round bidding is most appropriate where: (1) licenses are interdependent, and (2) the expected value of the license is high. *See Auction Second Report and order*, 9 FCC Rcd at 2367. The Commission has also noted that "because they are relatively expensive to implement and time-consuming, simultaneous and/or multiple round auctions became less cost-effective as the value of licenses decreases." *Id.*, at 2360.

[74/]*See id.*, at 2363 n. 81.